APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,520	11/29/2001	Martin Keller	DE920000016US1	5385

			EXAMINER
33360	7590	03/09/2004	RAYYAN, SUSAN F

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2177	

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 November 2001</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-15</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>29 November 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-15 are pending.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
>
> claiming the subject matter which the applicant regards as his invention.

3.   **Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Regarding claim 1, 11 the limitation "multitude" is indefinite as to what number of the partial regression functions would be considered a multitude, line 5.

Claim 1 recites the limitation "said current prediction model" in 10. There is insufficient antecedent basis for this limitation in the claim.

Claim1 recites the limitation "the most significant partial regression" in 15. There is insufficient antecedent basis for this limitation in the claim. (a most significant partial regression)

Claim Objections

4.   Claim 12 are objected to because of the following informalities: Each claim must begin with a capital letter and end with a period. Periods must not be used elsewhere in the claims except for abbreviations. See MPEP section 608.01(m). Appropriate correction is required.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   **Claims 1,6-7,10,14-15 are rejected under 35 U.S.C. 102(b) as being**

anticipated by Mimotogi (U.S. Patent No. 5,906,903).

As per claims 1,7,14-15 Mimotogi anticipates:

a computerized data mining method for automatically determining a prediction model for

a dependent data mining variable based on at least one independent data mining

variable at fig. 2, item 208 and col. 4, lines 55-58;

a variable replacement step replacing said independent data mining variable with

potential values from a global range by a multitude of independent local data mining

variables, each independent local data mining variable with potential values from a sub

range of said global range at col.5, lines 12-14;

an initialization step initializing a current prediction model at fig. 1, S 10 1 and S 102;

a looping sequence including a first step having sub steps of determining for every

independent local data mining variable not yet reflected in said current prediction model

a multitude of partial regression functions, each partial regression function depending

only on one of said independent local data mining variables at fig. 1, S103-S108;

determining for each of said partial regression functions a significance value at fig. 1, S

103 (Note: light exposure is the significance);

selecting the most significant partial regression function and the corresponding not

yet reflected local data mining variable at col. 5, lines 12-14; and

a second step of adding said most significant partial regression function to said

current prediction model and of associating said corresponding local data mining

variable with said significance value at fig. 1, S 104 and col. 5, lines 55-59.

Mimotogi teaches a variable replacement step replacing said independent data

mining variable with potential values from a global range by a multitude of independent

local data mining variables, each independent local data mining variable with potential

values from a sub range of said global range, an initialization step initializing a current

prediction model, a looping sequence including a first step having sub steps of

determining for every independent local data mining variable not yet reflected in said

current prediction model a multitude of partial regression functions, each partial

regression function depending only on one of said independent local data mining

variables, determining for each of said partial regression functions a significance value,

selecting the most significant partial regression function and the corresponding not yet

reflected local data mining variable; and a second step of adding said most significant

partial regression function to said current prediction model and of associating said

corresponding local data mining variable with said significance value at col.5, lines 12-

14,55-59 (fig. 1, S 101- S108).

Regarding claim 6, same as claim arguments above and Mimotogi anticipates:

wherein the initialization step said current of the prediction model is empty (fig. 1, block

START, Note: start is empty by default)

Regarding claim 10, same as claim arguments above and Mimotogi anticipates a

multitude of regression polynomials within first step is determined by determining

regression polynomials of all degrees up to a maximum degree m. (col. 4, lines 66-7)

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 2-5,8-9 are rejected under 35 U-S.C. 103(a) as being unpatentable

over Mimotogi (U.S. Patent No. 5,906,903) in view of Stuckman (US 5,701,395).

Regarding claims 2-3,5, same as claim arguments above and Mimotogi teaches

does not teach adding a polynomial if its significance is above a threshold-significance

and terminating a looping sequence if the most significant regression function is below

threshold significance. However, Stuckman discloses adding a polynomial if its

significance is above a threshold significance (fig. 4, blocks 60-70; Stuckman note if

significance is above threshold, block G8. loop continues)

and terminating a looping sequence if the most significant regression function is below

threshold significance (fig. 4, block 68, Stuckman). Therefore, it would have been

obvious to a ordinary skill in the art at the time the invention was made to add

polynomials and exit loops depending on the comparison of threshold-significance as

done by Stuckman (fig. 4) by slightly modifying Mimotogi's method accordingly, to

compare polynomials with a threshold significance and terminate a looping sequence if

the most significant regression function is below threshold significance. It would have

been obvious to a person of ordinary skill in the art at the time the invention was made

to have modified Mimotogi method in view of Stuckman to set a direct relationship

between regression functions and significance threshold and to distinguish preferred

regression functions, from other functions.

As per claim 4 same as claim arguments above and Mimotogi teaches:

wherein said looping sequence terminates if all local data mining variables are reflected

in said current prediction model (see fig. 1, S 105). (Note: if all independent variables

have been read by block S105 the looping cycle(s) ends.)

Regarding claim 8, Mimotogi teaches all of the claimed subject matter as set forth

above, including different powers of regression polynomials (fig. 1, S 103 and S 104,

Mimotogi) but does not use lowest powers of an individual polynomial as a significance

measure. However, Stuckman discloses a polynomial processor (fig. 1, item 10,

Stuckman) (Note: processors perform complex calculation) and calculates powers of

polynomials (col. 5, lines 40-46, Stuckman). Therefore, it would have been obvious to a

person of ordinary skill in the art at the time the invention was made to have modified

Mimotogi's predicting regression method by implementing Stuckman's polynomial

processor to identify regression polynomials with the lowest powers and to use these

functions as a significance measure. One of ordinary skill in the art at the time the

invention was made would have been motivated to use the lowest powers of a

regression polynomial as a significance measure to set a preferable boundary as a

comparing means for other functions (regression polynomials).

Regarding claim 9 same as claim arguments above and Mimotogi teaches

calculating different powers of all regression functions (fig. 1, S 103 and S 104,

Mimotogi) but does not use a F-test. However, the applicant discloses F-test is a

statistical test as well known in the state of the art, which checks whether two estimates

of variance of two independent samples are the same (page 12, paragraph 5, lines 5

and 6, disclosure). Therefore, it would have been obvious to one of ordinary skill in the

art at the time the invention was made, as admitted by the applicant, to have

implemented F-test to Mimotogi's method by adding another function to step S105

where the F-test could be implemented to calculate a significance of values for

coefficients of powers.

Allowable Subject Matter

9.   Claims 11-13 are would be allowable if rewritten to overcome the rejection(s)

under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all

of the limitations of the base claim and any intervening claims.

Conclusion

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Susan Rayyan whose telephone number is (703) 305-

0311. The examiner can normally be reached M-F: 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Breene can be reached on 703-305-9790. The fax phone numbers for

the organization where this application or proceeding is assigned are (703) 872-9306 for

Official communications, (703) 746-7238 for After Final communications and (703) 746-

7240 for Status inquires and draft communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 305-

3900.

Susan Rayyan

March 5, 2005

GRETA ROBINSON
PRIMARY EXAMINER